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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,460	10/07/2003	Takashi Hirosawa	243667US2	5305

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

WONG, XAVIER S

ART UNIT	PAPER NUMBER
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2616

NOTIFICATION DATE	DELIVERY MODE
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06/25/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/679,460

Applicant(s)

HIROSAWA, TAKASHI

Examiner

Xavier Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08) ✓
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statements

The information disclosure statement submitted on 7th October 2003 and 6th January 2006 have been considered by the Examiner and made of record in the application file.

Drawings

The drawings are objected to because Terminal labels A and C are missing in figure 8, please see figure 7 for example. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are

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not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: "For example, it is assumed that the length of the slot WA is 0.8 ms..." on page 14 line 5; the 'A' in W_A should be in subscript format. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 recites the limitation "The method according to claim 3... further performs the step of (f)..." in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "The method according to claim 5... performs the steps of: (i) and (j)..." in lines 2, 3 and 7 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by **Zalitzky et al (U.S Pub 2003/0184433 A1)**.

Consider claim 1, **Zalitzky et al** disclose a method of controlling communication of a plurality of data transceivers over a network (channel) of power lines (paragraph 0013; fig. 1; *abstract*). Signals – including a first signal – are given priorities (levels) according to a network controller (paragraph 0213). Signal wait (backoff) time lengths are *adaptively* determined according to an “n” value that is based on acknowledgement responses, in other words, priorities (paragraph 0215). A first transceiver X sends out a first request-to-send (RTS) signal, after a first backoff time, to a second transceiver Y; and, acknowledging the RTS signal with a clear-to-send (CTS) signal back to the first transceiver, inherently when monitored that no interference present on the channel (paragraphs 0051-58, 0222, 0231 lines 1-8). If no CTS response is received by the first transceiver X inherently when there is interference on the channel, then it restarts a wait time according to a backoff algorithm and retransmits the RTS signal to the second transceiver Y (paragraphs 0231 lines 8-11, 0222).

Consider claim 2, and as applied to claim 1, **Zalitzky et al** disclose a (first) wait time GC being equal to the sum of an elementary time (nT_c) and a randomly set

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secondary backoff time (mT_s) wherein m is a random integer. $GC = nT_c + mT_s$

(paragraphs 0210-212, 0221; eqs. 1 & 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zalitzky et al (U.S Pub 2003/0184433 A1)** in view of **Benveniste (U.S Pub 2003/0174690 A1)**.

Consider claim 3, and as applied to claim 1, **Zalitzky et al** disclose a transceiver sends a clear-to-send ACKnowledgement signal to another transceiver to confirm a request-to-send RTS signal has been received (paragraphs 0054-58).

However, **Zalitzky et al** may not have specifically mentioned a first wait time corresponding to priority level of the ACK signal is shorter than other signals' priority levels.

In the same field of endeavor, **Benveniste** disclose a Short Interframe Space (SIFS) as a "first" wait time for highest priority level frames such as ACK frames (paragraph 0024); and obviously the wait time for SIFS is shorter than other lower priority level frames, e.g. Priority Interface Space (PIFS) and Distributed Coordination Function Interframe Space (DCF) as known in the art (paragraphs 0025-26); (figs. 2 & 4).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of a first wait time corresponding to priority level of the ACK signal is shorter than other signals' priority levels as taught by **Benveniste**, in the method of **Zalitzky et al**, in order to minimize chances of retransmissions.

Consider claim 4, and as applied to claim 3, **Zalitzky et al** disclose a second guard/wait time restarts according to a time determined by a backoff algorithm when CTS/ACK signals are not received – after second guard time elapsed once already (paragraph 0231 lines 8-17; fig. 11 steps 281, 273 & 274; fig. 15 steps 508 & 510).

Consider claim 5, and as applied to claim 3, **Zalitzky et al** disclose relay units CONC (76 A, B & C) and intermediate-destination transceivers (32 A & C) for transmitting signals to other transceivers 32 via the channel (paragraphs 0173-174, 0236; fig. 3). Since the relay units and intermediate-destination transceivers function similarly to

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the transceivers, the relay unit can also monitor the channel – including when after receiving a second signal – for ACK signal (paragraph 0208 lines 13-21). Sending out the second signal if an ACK/CTS is not detected after a “third” guard/wait time (paragraphs 0232-233; fig. 16 involving steps 552, 554 & 558). The “third” guard time is set by equation $GD = (m-1)T_c + 3T_s$, wherein m is the number of missing frames, so as the number of missing frames in transmission goes down, the guard time goes down (gaining higher priority), therefore, it is logical to recognize the “third” wait time has shorter duration than previous guard times (with lower priorities) besides ACK/CTS signal (paragraphs 0233-234; eq. 4).

Consider claim 6, and as applied to claim 3, **Zalitzky et al** disclose during a “fourth” wait time if no ACK signal is received, it returns to setting a guard/wait time according to number of missing frames – priority level (paragraph 0235), an extension of “fourth” guard time to complete the transmission from a source to a destination transceiver through intermediate-destination transceiver Y (paragraph 0236; fig. 17 involving steps 608, 610 & 612).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A.) **Whitehill et al (U.S Pat 6,404,756 B1)** mention nodal communications using plural shared parallel data channels.

B.) **Raphaeli et al (U.S Pub 2003/0103521 A1)** mention layer 2 shared network medium with backoff mechanism for CSMA/CD.

C.) **Brockmann et al (U.S Pub 2003/0133469 A1)** mention signal collision prevention through two modulation formats.

D.) **Diepstraten (U.S Pat 5,339,316)** mention three time intervals to detect ACK signals.

E.) **Grabiec et al (U.S Pat 6,006,271)** mention complete collision avoidance by frequencies matching of potential contending signals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xavier Szewai Wong whose telephone number is 571-270-1780. The examiner can normally be reached on Monday through Friday 8 am - 5 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Xavier Szewai Wong
X.S.W / x.s.w
10th June 2007

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